



THE LEADING CAUSES OF SLEEP DEPRIVATION IN TEENAGERS

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ABSTRACT

As time elapsed, it became clear that teenagers were not getting the necessary amount of sleep; thus resulting in sleep deprivation. An extensive investigation was conducted using internet resources such as Hopkins Medical to gain information about this topic. Many surveys from institutions such as Stanford were also used to acquire sufficient information. As a result, it was determined that early school start times led to teen sleep deprivation, as well as homework overload and increased usage of technology. This information is useful since teens go through significant changes, and in order for those changes to continue, a teen must get enough sleep. It is also important as it has been proven that a lack of sleep can lead to a variety of mental as well as physical health problems.

KEYWORDS: Sleep deprivation, melatonin, Circadian rhythms, teenagers, emotions.

INTRODUCTION

Over time, researchers have learned more and more about the teenage mind. As a result, they have proved that psychology, especially that of an adolescent brain, is a fascinating topic due to its multitude of aspects. Several investigations in this study have found that fewer than 10% of teenagers are not getting enough sleep; this is quite alarming. As a result, given the severity of the situation, this sort of data warrants investigation.

Consequently, through the course of this paper, the reader should gain a thorough grasp of the teenage mind. Additionally, the reader should be able to fully comprehend why elements such as several aspects of school as well as the increased use of technology are the leading causes of sleep deprivation due to their tremendous mental and physical demands.

Literature Review

There has been a large amount of research done into the mind of children. The Child Mind Institute is an organization that displays various articles based, on scientific research, about the mind of teens, young adults, as well as children. The article states multiple specific cases in which two teenagers don't receive an adequate amount of sleep. When explaining this ordeal, they reveal that the combination of biology, technology, and societal expectations creates a perfect combination for chronic sleep deprivation.

According to The Child Mind Institutes, biology is a factor in the sleep deprivation of teens due to the later release of melatonin. Technology is also a factor in sleep deprivation due to the blue light released from the device that delays the production of melatonin. Lastly, societal expectation which includes the early opening hours of school, homework, and overscheduling is a huge factor in teens' sleep deprivation as teens tend to eliminate hours of sleep to attend to those needs.

Another website that speaks about the sleep deprivation of teens is CNN. CNN interviewed Lisa Lewis, the author of *The Sleep-Deprived Teen*, in which she revealed that stress, as well as the early starting times of school are major factors that contribute to sleep deprivation of a teen. She also goes on to state that the pandemic was also contributing factor also, due to the fact that this was a time in which the mental health of teens plummeted.

Lewis additionally goes on to speak about the fairly recent implementation of a law that specifically states that public and charter middle schools should start no earlier than 8 a.m. and high school should start no earlier than 8:30 a.m.

There is a correspondence between the information presented in this paper and the information provided by this source.

Method

This paper aims to reveal the leading causes of sleep deprivation in teens. In order to achieve this, extensive research was conducted, which included the analysis of various studies. To convey this information congruously, the body of the paper is split into four main components, with the integration of four additional subsections to better understand the information being presented.

What is the Circadian Rhythm? How is it connected to sleep deprivation?

Circadian rhythms are 24-hour cycles that operate in the background of the

body's internal clock to carry out critical tasks and processes. Circadian rhythms are primarily influenced by light and darkness. They are managed by a brain region called the Pineal Gland which releases melatonin - the sleep hormone. It therefore has the potential to interfere with sleep, body temperature, hormones, hunger, and other bodily systems. The circadian rhythm also prepares your body for predicted environmental changes, such as the time for exercise, sleep, and eating. The body's sleep and wake cycle are one of the most significant and well-known circadian rhythms. However, when an individual's actions delay their release of melatonin, they may experience sleep deprivation.

The condition known as sleep deprivation occurs when the person does not get enough sleep, sleeps at the wrong time of day, doesn't sleep well, doesn't get all the different types of sleep that their body requires, or has a sleep disorder that prevents them from sleeping well.

Why is sleep deprivation dangerous for teens?

Individuals who lack sleep are more likely to experience a variety of negative outcomes, such as inability to concentrate, anxiety, despair, suicidal thoughts, and even suicide attempts. In addition to its mental effects, sleep deprivation is also linked to chronic health issues, such as heart disease, kidney disease, hypertension, diabetes, stroke, obesity, and depression. It can also intensify anxiety, triggering a vicious cycle of sleeplessness and anxiety problems. Sleep deprivation additionally affects many students' capacity to acquire information, therefore inhibiting the retention of information, and restricting their ability to recall that information.

Furthermore, sleep-deprived teenagers are more depressed and worried, according to research. Each hour of missed sleep was connected with a 38% rise in the likelihood of feeling depressed or hopeless and a 58% increase in suicide attempts in a study of over 28,000 high school students.

Why is it critical for teenagers to get enough sleep?

When the required amount of sleep is not achieved, teens start to experience symptoms of sleep deprivation which include but are not limited to slower thinking, shorter attention span, weaker memory, poor or dangerous decision-making, fatigue, and mood swings which affect various other aspects of a student's life such as their academics. Teens who slept fewer than nine hours per day had different brain structures and greater issues with mood and thinking than those who slept enough, according to the National Institutes of Health. These findings imply that sleep therapies may be required to aid in the improvement of mental and behavioral health during adolescence and beyond. Additionally, a lack of sleep can cause impaired brain development, learning difficulties, and increased unpleasant emotions.

How does the early school opening hours currently affect teens?

The usual teenage late nights and lazy mornings are occasionally linked to poor habits or a youthful drive to be cool. However, changes in the production of melatonin, the sleep hormone, occur alongside the more evident hormonal changes associated with adolescents. As a result of the delayed release of daily melatonin, the circadian rhythm is disrupted during the adolescent years, making teenagers physiologically desire to remain awake later at night and sleep later during the day. Due to this, teenagers tend to fall asleep around 11 pm or midnight and naturally awaken around 8 or 9 am. A problem arises as the average start time for public high schools in the United States is approximately 8 a.m. or earlier,

forcing students to wake up around five or six in the morning to accommodate for the unethical starting time of school. To further demonstrate this idea, "Countless studies have shown that early school start times are associated with students getting less sleep" (Suni). Furthermore, according to a US News story titled "The Importance of Sleep for Teen Mental Health," "surveys suggest that fewer than 9 percent of teens get enough sleep" (Amabile).

This is especially physically demanding as it leaves teens to get approximately six to seven hours of sleep which is ultimately not enough hours as they require about nine to nine and a half hours of sleep to function properly as well as "[support] their developing brain, [and] physical growth spurts" According to, Johns Hopkins pediatrician, Michael Crocetti, M.D., M.P.H. (Johns Hopkins, 2022f).

In order for teens to obtain enough rest, many sources have claimed schools should delay their opening hours. This is because it has been determined by Harris, a sleep psychologist, that "mood, academics, attendance, and graduation rates all improve" when schools delayed their start times to 8:30 a.m. or later (Durrani).

How does homework impact the sleep deprivation of a teen?

Along with the physical demand of waking up against the time of a teen's circadian rhythm, homework contributes to sleep deprivation of teens.

After enduring a long day of school, filled with mentally and physically strenuous work, teens complete on average "more than three hours on homework each school night, with 11th graders spending more time on homework than any other grade level" (Lohmann). To put this into perspective, high school students spend over seven hours per week on homework. An article, titled "What's Preventing Adequate Teen Sleep", states that homework is "possibly the biggest factor that keeps teens from getting enough sleep" (Amabile). This occurs because students usually have a significant amount of homework and not enough time to complete it. As a result, sleeping is frequently the first item they cut from their routine thus leading to deprivation of sleep. Additionally, "Too much homework can result in headaches, exhaustion, and weight loss" according to Oxford Learning (Amabile).

Along with the usual issues that develop as a result of the overflow of homework, some children face anxiety as they desire to achieve absolute academic success. As a result, the impact of homework is amplified as these students study for extended periods of time. A link between mental health and homework has been found as a result as anxiety is usually connected to sleep issues as excessive stress and dread make it difficult to fall and remain asleep during the night which can cause sleep deprivation.

What should be done about the amount of homework teens get?

Although we need to educate the next generation of young adults, it is imperative that we do it in a way that is not emotionally or physically taxing.

A Stanford study discovered that children in high-achieving communities who spend too much time on homework suffer from increased stress, physical health concerns, a loss of balance, and even social estrangement. According to the study, doing more than two hours of homework every night may be harmful. It may not be necessary to eliminate homework entirely, but rather to be more aware of what students bring home.

This has already been assessed in certain parts of the world as French primary schools have banned homework since 1956. Moreover, older children often spend up to an hour on homework each evening. As a result, students have the opportunity to truly disconnect from school and to spend time doing something other than study, as well as to pursue their individual interests and hobbies. This may also create a sense of accomplishment, boost one's self-esteem and confidence, and promote mental well-being and a sense of belonging which is consequential for the time in one's life when they undergo countless changes.

How does technology contribute to the sleep deprivation of teens?

In recent years, teenagers have become increasingly reliant on technology. According to surveys, more than 90% of teens use social media, and around 75% have at least one active social media presence by the age of 17. This has become a problem as statistics on teen mobile phone addiction present a bleak picture of teenage smartphone addiction. According to research, around 78% of teens check their mobile devices every hour, 72% feel the need to answer instantly to any messages they receive, and 45% use the internet constantly, especially when they should be resting. This is especially dangerous for the teenage brain not only because it distracts a teen resulting in a delayed bedtime, but the blue light emitted by electronic screens has been shown to rewire the brain to postpone the start of sleep.

This happens as Blue light tricks the brain into believing it is daytime. When this happens, the body stops producing melatonin causing it to take long for an individual to fall asleep. Additionally, when sleeping near technology, sounds and flickering lights might create undesired awakenings. This can be detrimental as it can cause disruptions to one's circadian rhythm. When this occurs, teens are likely to fall asleep after 11 pm on weeknights, and with the limitations of the early opening of school, they don't get the required amount of sleep. The only

time adequate sleep may be acquired is when teens sleep in on weekends.

In order to attain an adequate amount of sleep, doctors recommend that gadgets be switched off during meals and at least an hour before bedtime. Even if one sets their phone or other gadgets on mute, having them in the bedroom provides the temptation to glance at them if you wake up in the middle of the night, perhaps preventing you from falling back asleep. As a result, physicians advise parents to keep any gadgets with screens out of their teen's bedroom after night and to not allow a TV in their teen's bedroom.

Conclusion

As teenagers go through puberty, their bodies undergo significant changes throughout their adolescent years. Along with all of these changes, teens do not get an adequate amount of sleep each night. This is due to a disruption in their circadian cycle, as well as school starting earlier, having more homework, and the frequent use of technology. An individual's adolescent years are fundamental for their development, and without adequate sleep, a teen may have delayed growth. Additionally, a teen may experience a series of mental and physical health illnesses.

To get the appropriate amount of sleep, kids must be deliberate about their actions, such as their use of technology, which can have a negative impact on them. As a society, we must also be conscious and sensitive of the changes occurring in a teen's body and mind and alter several aspects of their life, such as the early opening hours of school, to adhere to these changes. As a result, we will have a well-rounded youth who will enjoy all of life's intricacies while still receiving an excellent education.

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